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CENTRAL INTELLIGENCE AGENCY

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[redacted] is a seven-page report on the Mining Research Institute (Bányászati Kutató Intézet) in Budapest. The report contains information on the historical background; construction plans for a new institute building; the departmental organization; ordinary and research work performed by the departments; department heads and other leading officials; and the labor force of the Institute.

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INFORMATION REPORT INFORMATION REPORT

H U N G A R Y

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Economic/ScientificThe Mining Research Institute, BUDAPEST

1. The Hungarian Mining Research Institute, known as the BANYASZATI KUTATO INTEZET, is situated in various buildings in different parts of BUDAPEST. Its headquarters is at 18, ALPARI GYULA UTCI.

2. [redacted] originally called the Central Research Laboratory of Coalmining (SZENBANYASZATI KOZPONTI KUTATO LABORATORIUM). In 1949 the name was changed to BANYASZATI KUTATO INTEZET. In 1953 the machinery-development section broke away from the rest and was named the BANYAGEP ALKALMAZASI KISEPLETI KUTATO INTEZET and was housed in NADOR JOZSEF TER, BUDAPEST. During this period the head of the machinery section was BOCSANSZKY (or BOTCANSZKI) f.m.u., now an official working for the Ministry Council (MINICS). Past heads of the Institute were VAIK Arthur (1949-1954) and Dr. ZIMBO Janos (1954-1955). In the summer of 1955 the two [redacted] joined again.

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3. Originally (1949) the Institute dealt only with coal. In 1950 this was extended to include all ores and even stone-quarries.

4. The Institute comes under the Department of Industrial Development of the Ministry of Coalmining (SZENBANYASZATI MINISZTERIUM: MUSZAKI FEJLESZTESI FOOSTALY). This department is responsible for ordering research into mining problems, evolving new techniques, machinery, etc.

5. Other premises used by the Institute are those housed in an old cosmetics factory at KARTACS UTCI, 24, BUDAPEST, XIII. Here is installed a coal-preparation pilot plant. Apart from this the KARTACS UTCI building is badly equipped.

6. It is intended to build a new Institute near the OBUDA gas-works where there are railways and a better supply of coal, as well as other facilities such as coking plants. The official target-date for this building is the end of 1957 or the beginning of 1958. The living-quarters for workmen engaged on the project are ready and the Chemical Industries Planning Institute has already put forward its plans.

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7. The OBUDA building will house the Institute's Chemical Department, the Coal-Preparation Department and perhaps the Ore Department as well. The rest of the Institute is scheduled to move into a half-finished Army hospital in OBUDA about the same time. Plans for office-allocation are completed but a difference of opinion with the Ministry of War over the building is holding things up. AJTAY, Director of the Institute, has wide connections and it is thought that he will win the dispute. It is thought highly probable, however, that the revolution will have delayed both these plans for a considerable period.

8. Before the revolution, the Institute employed between 200 and 300 persons. Of these, 40 or 60 were qualified scientists or engineers. About 40 of the original total staff left Hungary as a result of the revolution, but [redacted] their places have since been filled.

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9. The Director is AJTAY Zoltan [redacted]

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10. The Deputy-Director is BINDER Bela. [redacted]

11. The Departments in the Institute are listed below. The figure given for the number of persons employed is only very approximate but includes all categories of workers.

(a) SZEN ELOKESZITESI OSZTALY: Coal-Preparation Department.

40 workers headed by MRTINI Karoly [redacted]

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(b) BANYA BIZTONSAG: Mining Safety. 10 persons, headed by DUBICS György.

(c) VEGYESZETI OSZTALY: Chemical Department. 12 persons, led by GIL Ernö.

(d) BANYA GEFESZETI OSZTALY: Mining Machinery. 25 persons headed by a young man named MEITZEN Nandor.

(e) BANYA MUVELES: Exploitation and Technique. 10 men until recently, led by MARTOS Ferenc. [redacted]

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(f) ERC ES KOZET OSZTALY: Quarry and Ore Department (pyrites, lead, manganese, etc.). 15 men headed by HALASZ Andras. This department had been responsible for adapting "hydrocyclons" made by the GABOR IRON Factory for the preparation of Manganese ore mined at the URKUT MANGINERC BANYA, near VESZPREM. (This department was concerned mainly with products other than coal.)

(g) BANYAVIZ VEDELMI OSZTALY: Department for preventing the accumulation of water in the mines. 3 - 4 persons, leader unknown. This Department was once scrapped but was later reorganised.

(h) KISERLETI KIRENDLETSEGEK: Experimental team for practical tests of the prototype machinery developed. The number of workers is not known, but the leader is SZENTORNYAI, f.n.u. [redacted]

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(i) KÖZET MECHANIKA OSZTALY: Department for studying the rock formation around the mine-shafts and tunnels to determine the possibility of shifting and subsidence. It is also their responsibility to advise on the need to fill old workings with sludge etc. There are 12 men in this department, led by Dr. HORVATH, f.n.u.

(j) OLAJ OSZTALY: Oil Department. 8 men under MIZLAJN Pal [redacted] 25X1

(k) BANYA VILLAMOSASAG: Mining electricity department. This department is responsible for planning the supply of power throughout

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the mines (insulation and spark-proofing is the responsibility of the Safety Department.) The number of men employed here is not known but they are led by VITALYOS Gabor.

(1) ADMINISTRACION: Administration. This office employs more than 30 persons. It is headed by PLATTHY Elemer, rated as the next most important man in the Institute after the Director. He is responsible, inter alia, for all the finances connected with research.

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12. The following are some examples of the work of the coal-preparation department :-

(a) In TATABNYA tests were made during 1956 to see if the waste-heaps there, some of which are 30 years old or more, would yield any appreciable quantity of quality coal if submitted to processing. TATABNYA was chosen because the waste-heaps there were believed to contain the highest proportion of usable coal. The Institute staff had to advise on this problem.

(b) The department has to devise new washing-processes for coal in order to reduce the ash-content. This varies in Hungary between areas and even between points within the same area, but on the whole it lies between 30% and 40%. Orders to treat certain coals are received from the Ministry. The coal is then examined in the laboratory, put through tests in the pilot plant and then the resulting data is given to the Ministry or to the appropriate Industrial Planning Institute (such as the Mining Industry Planning Institute in ROOSEVELT TER).

(c) New devices for coal separation have to be evolved. MARTINI, for instance (head of the department), invented a separator operated by compressed air. Rapid blasts of air under a rotating cylinder "fluidised" the coal inside and caused the coal to rise higher than the shale. Advantage over the liquid method is that there is no filtration of water needed afterwards. One disadvantage is that the separation is not so sharp.

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(d) About two or three years ago, scientists from the Institute went to Czechoslovakia to examine a separation plant erected [redacted]
[redacted] leading Czech engineer MALI (?) f.n.u.

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[redacted] The Czechs allowed the Hungarians to copy the plant, but insisted that the whole business should be treated as a matter of the greatest secrecy. The [redacted] plant operated on BARIT (Barium Sulphate: BaSO₄) which had an advantage over the normal heavy media such as water mixed with sand and clay, in that it combined heavier specific gravity with lower viscosity. Its specific gravity can also be varied easily to suit different conditions of coal. It is intended to use this method of separation in a new plant in the BORSOD coalfields where the grade of coal is low.

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(e) The institute is also concerned with the erection of a new washing plant between PECS and KOMLO near HOSZUHETENY, where a large shaft is scheduled for completion by 1960. The PECS plant is already overloaded and cannot supply sufficient washed coal to the gas plant at OBUDA and the factories at SZTALINVAROS. Czechoslovak engineers, led by MALI, will be erecting this washing plant, and the Hungarian Institute was asked for complete data on the coalfields in the area in order that the Czechs might assess the cost of the project. This date was handed to them two days before the revolution broke out.

(f) The coal-preparation department has also been concerned with the reconstruction of the PECS washing-plant. Here too the Czechs under MALI are to assist the Hungarians.

(g) The coal-preparation department, in common with the rest of the Institute, was engaged on the mass checking of Hungarian coal deposits ordered by the Russians at the end of 1953 onwards. This was at first a super-priority task which caused all other work to come to a standstill. The work was finally completed only in the summer of 1956 but after the first twelve months, the sense of urgency in the matter began to diminish and normal work was partly resumed.

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13. The following are some examples of the work done by the Mining Safety Department of the university :-

- (a) The department was organised as a direct result of the TATA-BANYA disaster in 1952 when 80 miners were killed. The cause of the accident was an explosion of methane followed by ignition of the coal-dust, both set off by a blasting operation. The first task of the department was therefore to take samples of mine-air from every shaft and classify them according to their content of methane and carbon dioxide. The result of the tests was that PECS and KOMLO (both high-grade coal), TATABANYA and DEL NOGRAD (both inferior coal) were all classified as dangerous. No carbide lamps, no spark-producing machinery, etc. were allowed to be used in these pits.
- (b) Dust-suppression also occupied the the attention of this Safety Department. Efforts to find an ideal reagent to mix with water were never conclusive. Attempts were made to use the Sulphonates used in the textile industry, but these were not wholly satisfactory. A Russian expert came to the Institute two years ago to see what progress had been made in this field, but the impression gained was that they were no further advanced than the Hungarians.
- (c) The department was engaged on the development of spark-proof switches, insulation of cables, etc.
- (d) The department also drew up a book of miners' safety rules, adherence to which was supervised by the ORSZAGOS BINYAMUSZAKI FELUGYELOSEG, a type of higher committee believed to be drawn mostly from the Party's central committee members.

14. The Chemical Department is essentially one dealing with analysis rather than treatment of the coal. Its work includes the following :-

- (a) Developing and applying new methods of chemical analysis for the organic and inorganic contents of coal.
- (b) Quality-control of coal by routine tests, as ordered by the Ministry.
- (c) Collation of data from the pit-head laboratories in all parts of Hungary to form a central register of coal qualities being mined.

15. The Machinery Department's research work included the following :-

- (a) Research into methods of transmitting power hydraulically and by compressed air.
- (b) Development of cutting machines, etc., such as the F.4, which was developed under the direction of AJTAY. This machine has a rotating head fitted with teeth or knives, the head being mounted on a long arm and being pushed against the coal-face.
- (c) Development of devices such as hand-pumps for obtaining samples of mine-air. Some of these were copied from Western patents.
- (d) Development of seals for compressed air and oil. Rubber O-rings were copies from Western patents, but the poor quality of Hungarian rubber often prevents efficient operation.
- (e) The testing of newly-received Russian equipment and the adaptation of it to conditions in Hungarian mines. The Hungarian Scientific Academy (MAGYAR TUDOMANYOS AKADEMIA) has a workshop in the ZIVth (ZUFLÓ) district of BUDAPEST, named the KUTATASI ESZKOZOKET KIVITELEZO VALLALAT. This workshop produces prototypes of all the machines and other equipment invented by all Government Research Institutes and therefore works closely with the Machinery Department of the Mining Research Institute. It was in this workshop that the Hungarian

[redacted] plant mentioned in para. 12(d) above was first 25X1 constructed and also the compressed air coal-preparation plant mentioned in para. 12(c) above. The Mining Research Institute also works closely with the workshop belonging to the general Patents Office (ORSZAGOS TALIMANYI HIVATAL UJITASOKAT KIVITELEZO VALLALAT) and with the DUCLOS BINYALOEP GYAR in GYOMROI UT., UJPEST.